FIG. 1

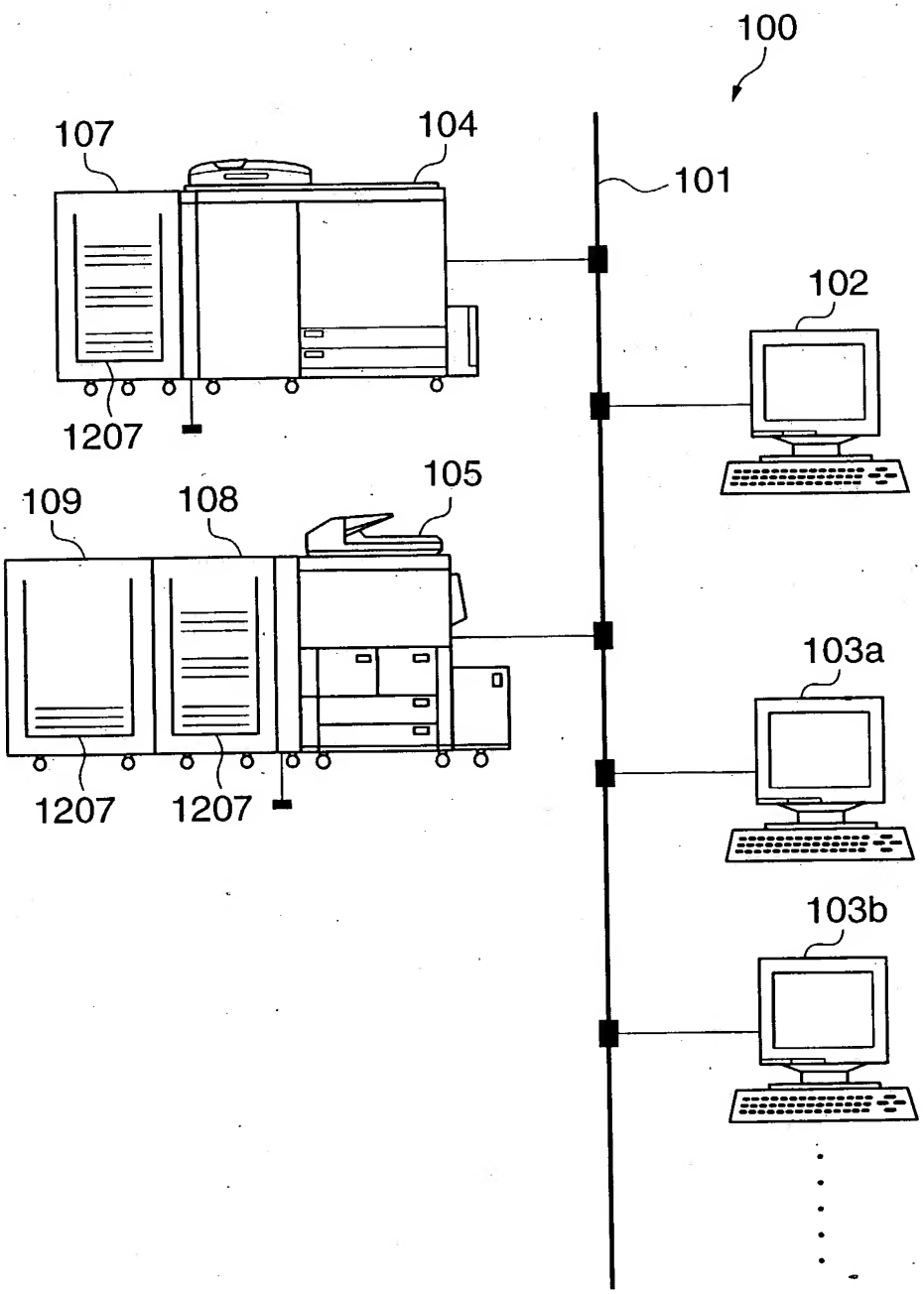


FIG. 2

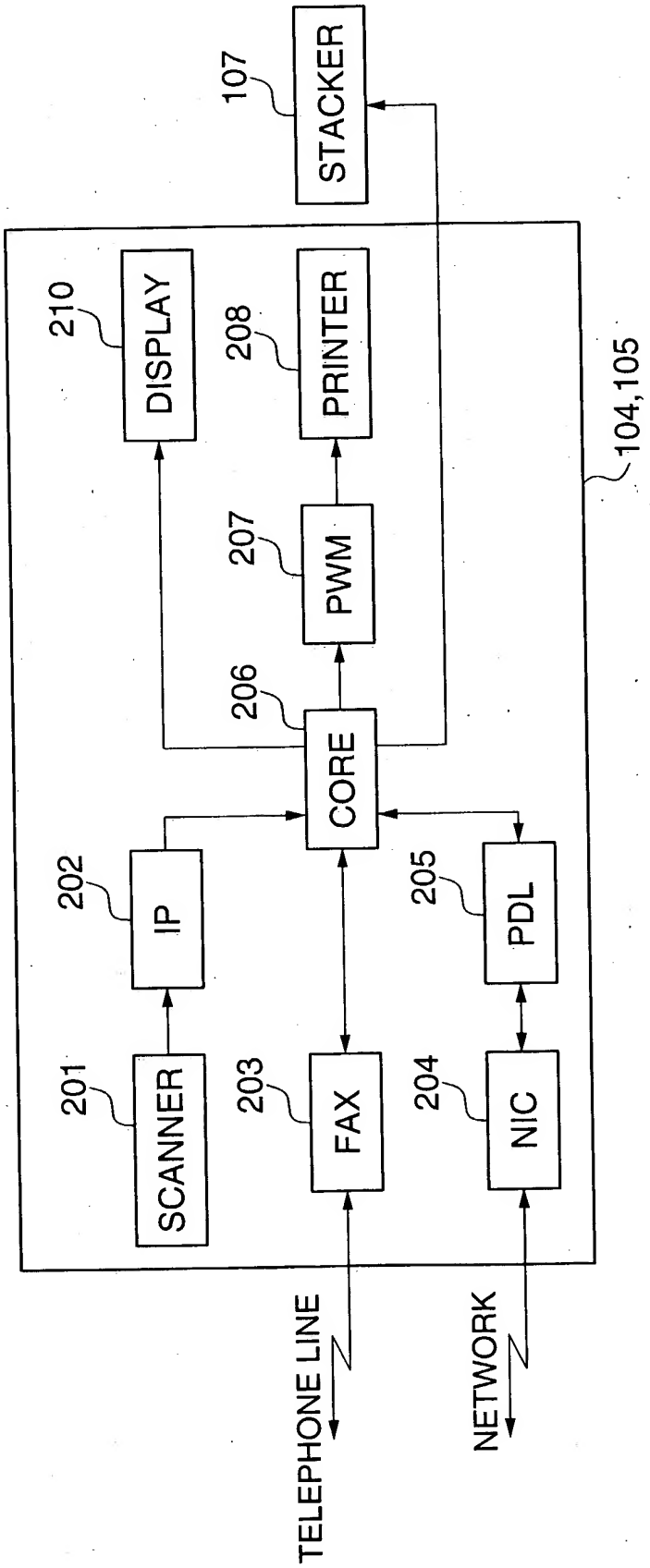

107
STACKER
210
DISPLAY
208
PRINTER
104,105
207
PWM
206
CORE
202
IP
205
PDL
201
SCANNER
203
FAX
204
NIC
TELEPHONE LINE
NETWORK

FIG. 3

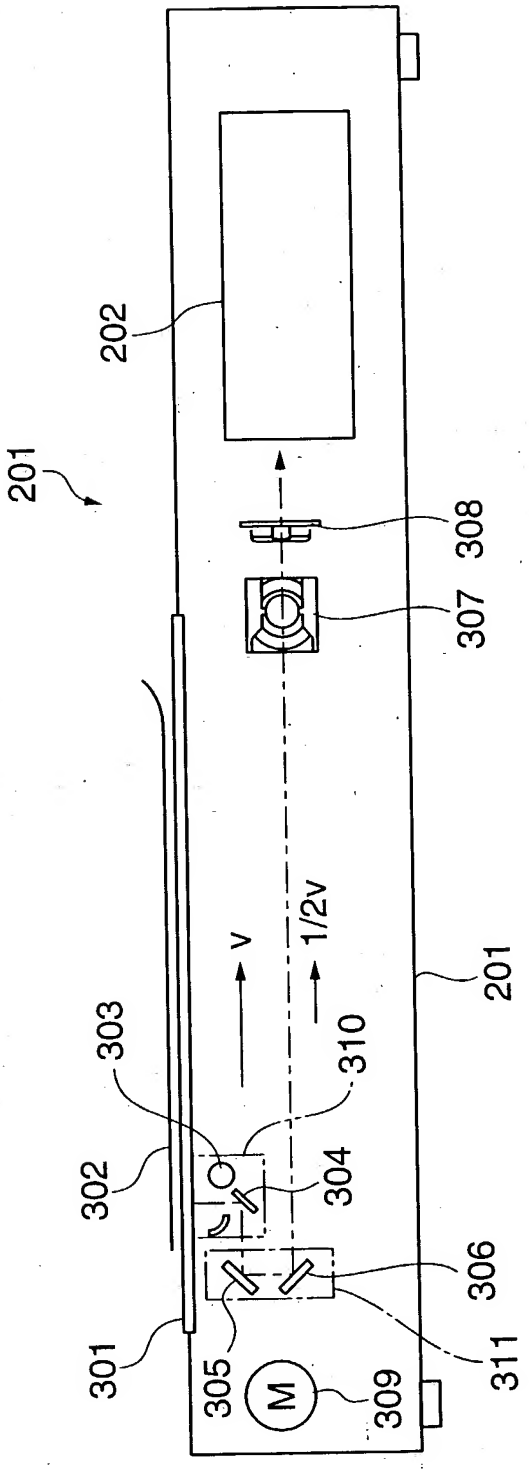


FIG. 4

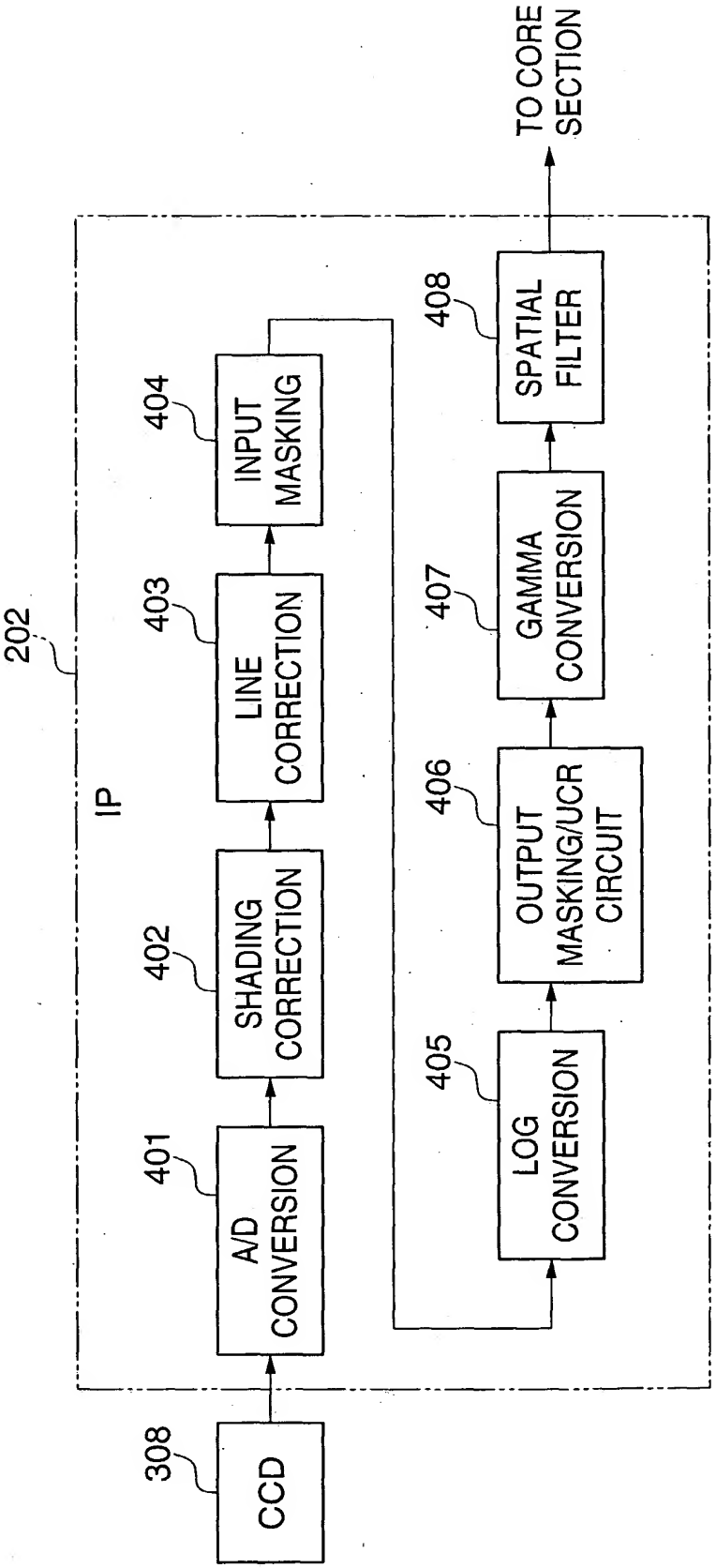

TO CORE SECTION
202
IP
308
CCD
401
A/D CONVERSION
402
SHADING CORRECTION
403
LINE CORRECTION
404
INPUT MASKING
405
LOG CONVERSION
406
OUTPUT MASKING/UCR CIRCUIT
407
GAMMA CONVERSION
408
SPATIAL FILTER

FIG. 5

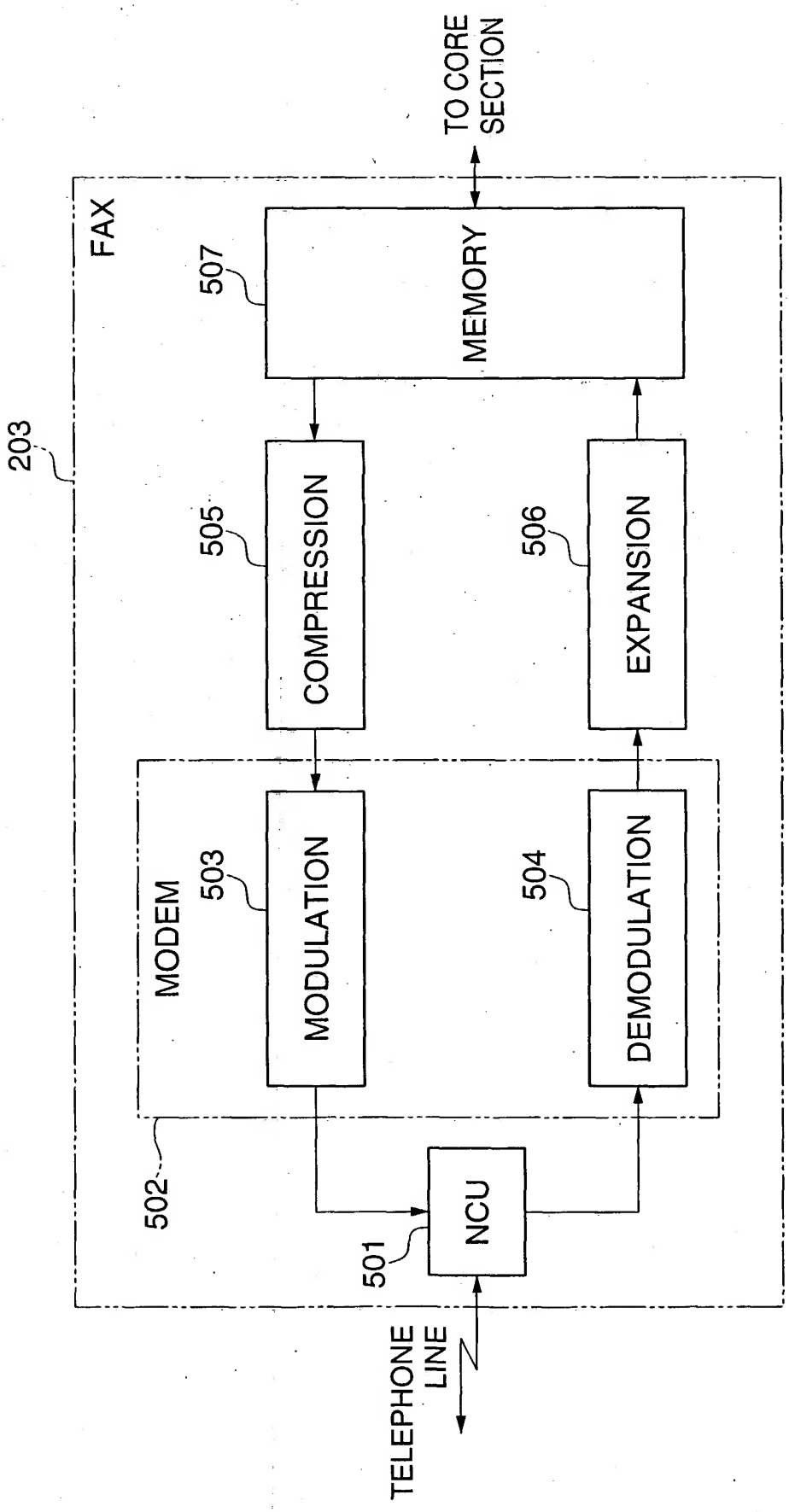

TO CORE SECTION
FAX
203
507
MEMORY
505
COMPRESSION
506
EXPANSION
MODEM
503
MODULATION
504
DEMODULATION
502
501
NCU
TELEPHONE LINE

FIG. 6

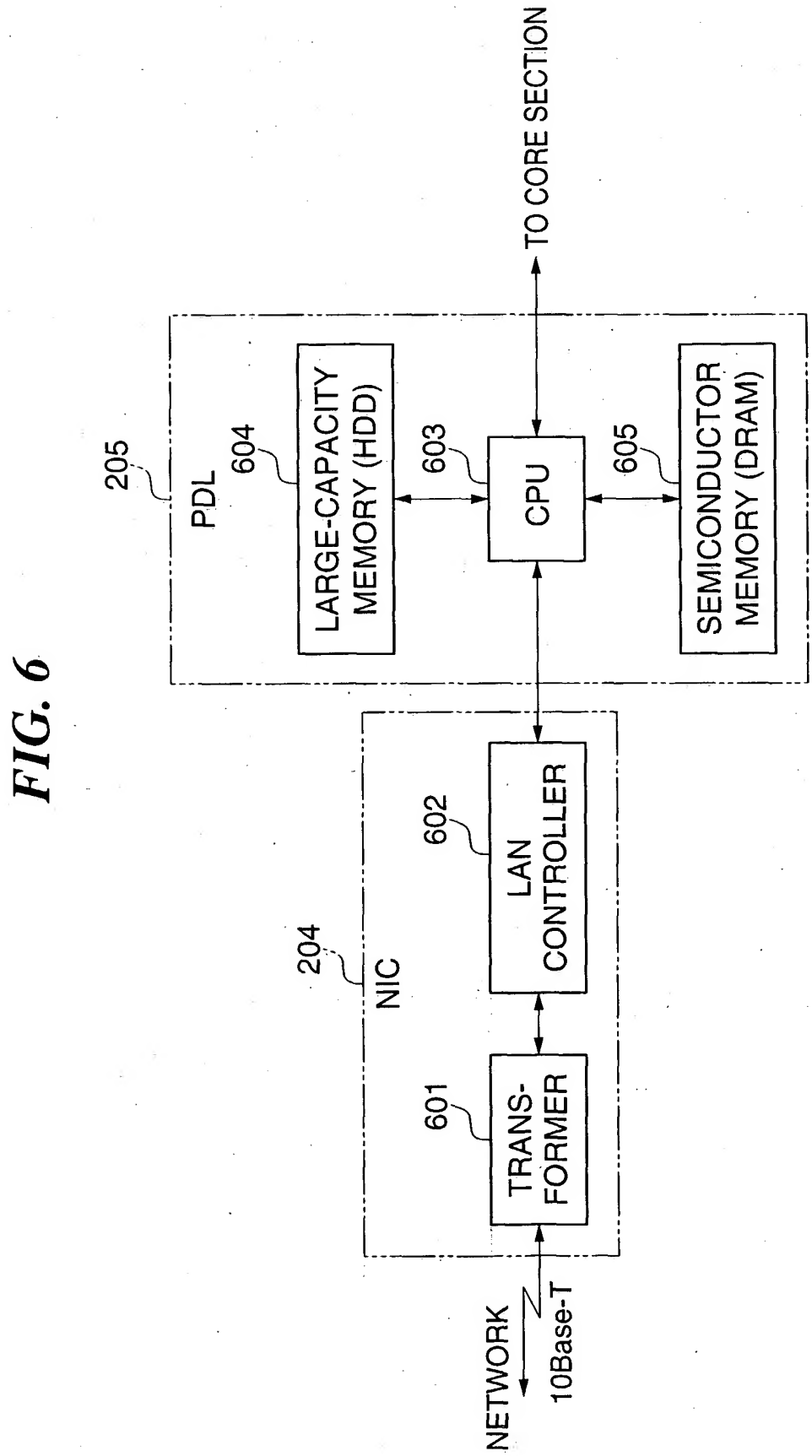
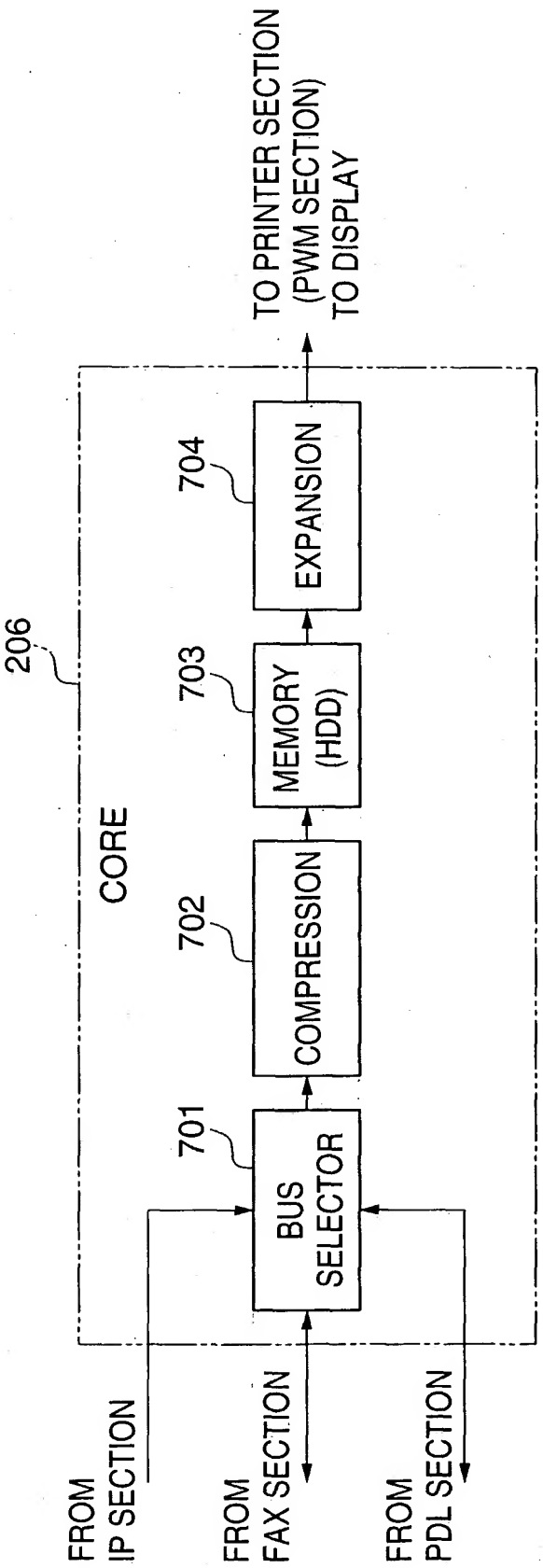

TO CORE SECTION
205
PDL
604
LARGE-CAPACITY MEMORY (HDD)
603
CPU
605
SEMICONDUCTOR MEMORY (DRAM)
204
NIC
602
LAN CONTROLLER
601
TRANS-FORMER
NETWORK
10Base-T

FIG. 7


206
CORE
701
BUS SELECTOR
702
COMPRESSION
703
MEMORY (HDD)
704
EXPANSION
FROM IP SECTION
FROM FAX SECTION
FROM PDL SECTION
TO PRINTER SECTION (PWM SECTION)
TO DISPLAY

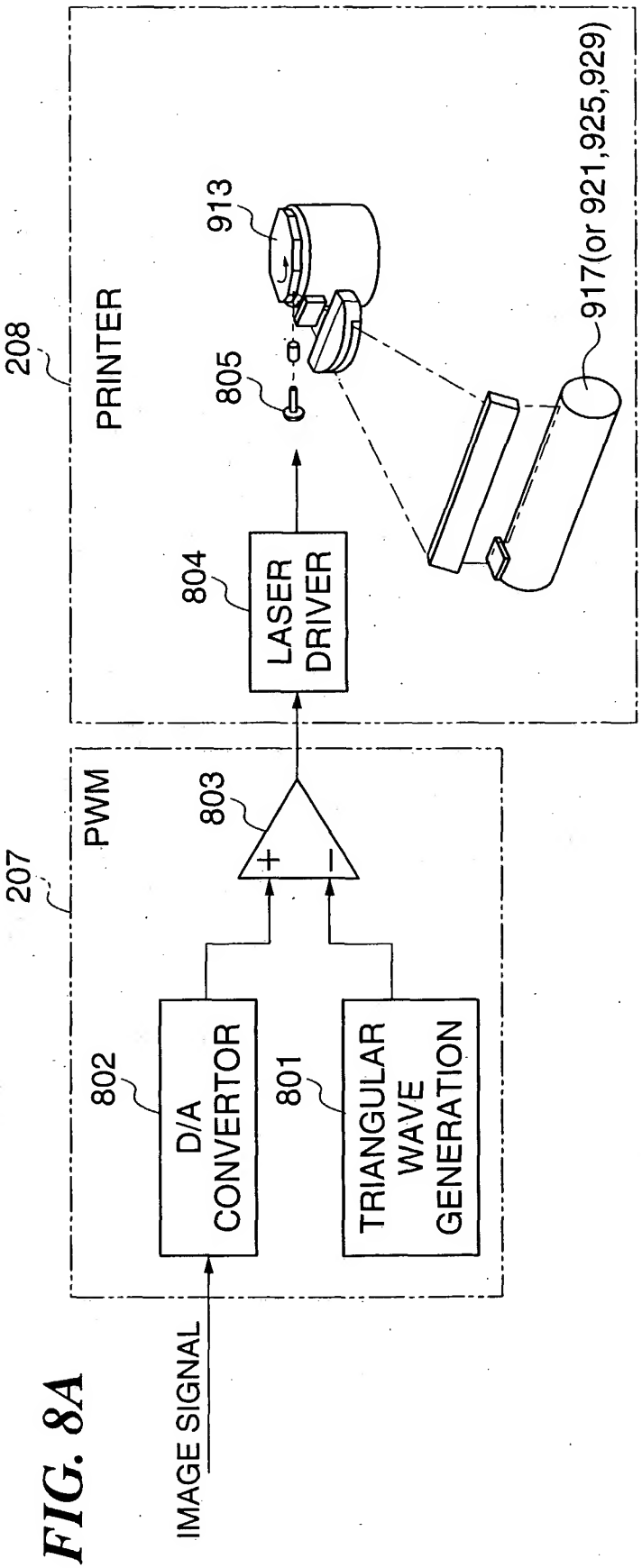


IMAGE SIGNAL
207
PWM
802
D/A CONVERTOR
801
TRIANGULAR WAVE GENERATION
803
804
LASER DRIVER
208
PRINTER
805
913
917(or 921,925,929)

FIG. 8A

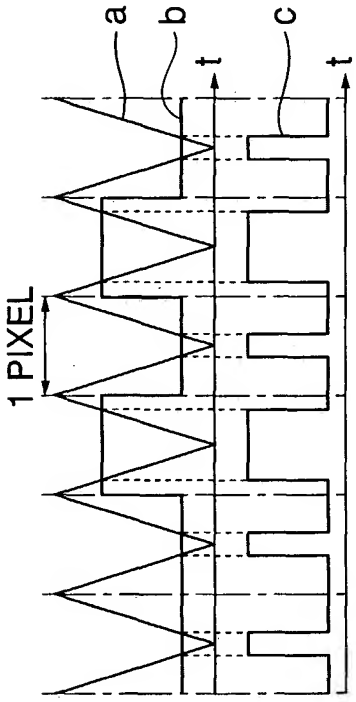

a
b
t
c
t
1 PIXEL

FIG. 8B

FIG. 9

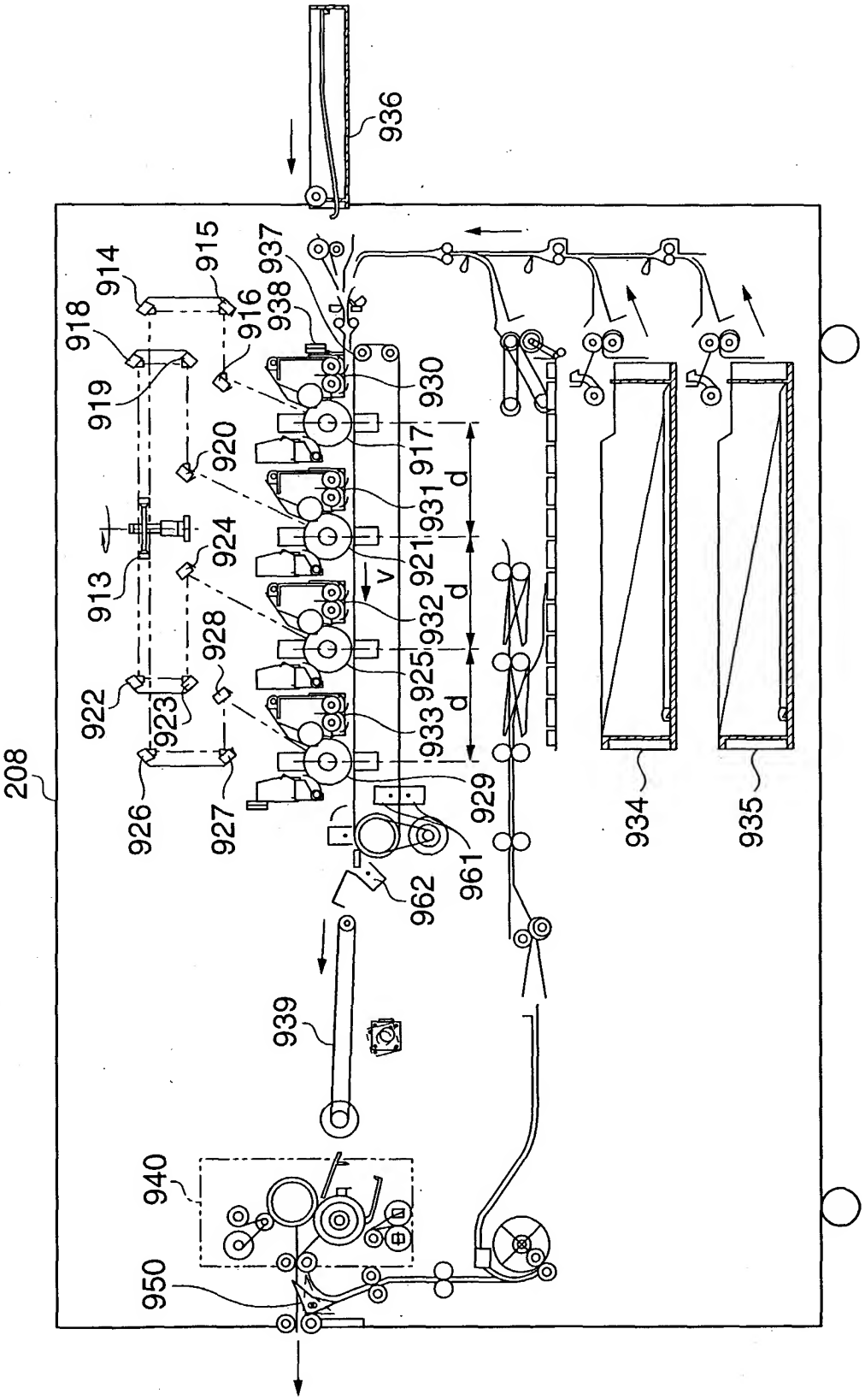

936
914
915
937
918
916
938
919
930
920
917
931
d
913
924
921
V
932
928
925
922
923
933
929
926
927
961
962
934
935
208
939
940
950

FIG. 10

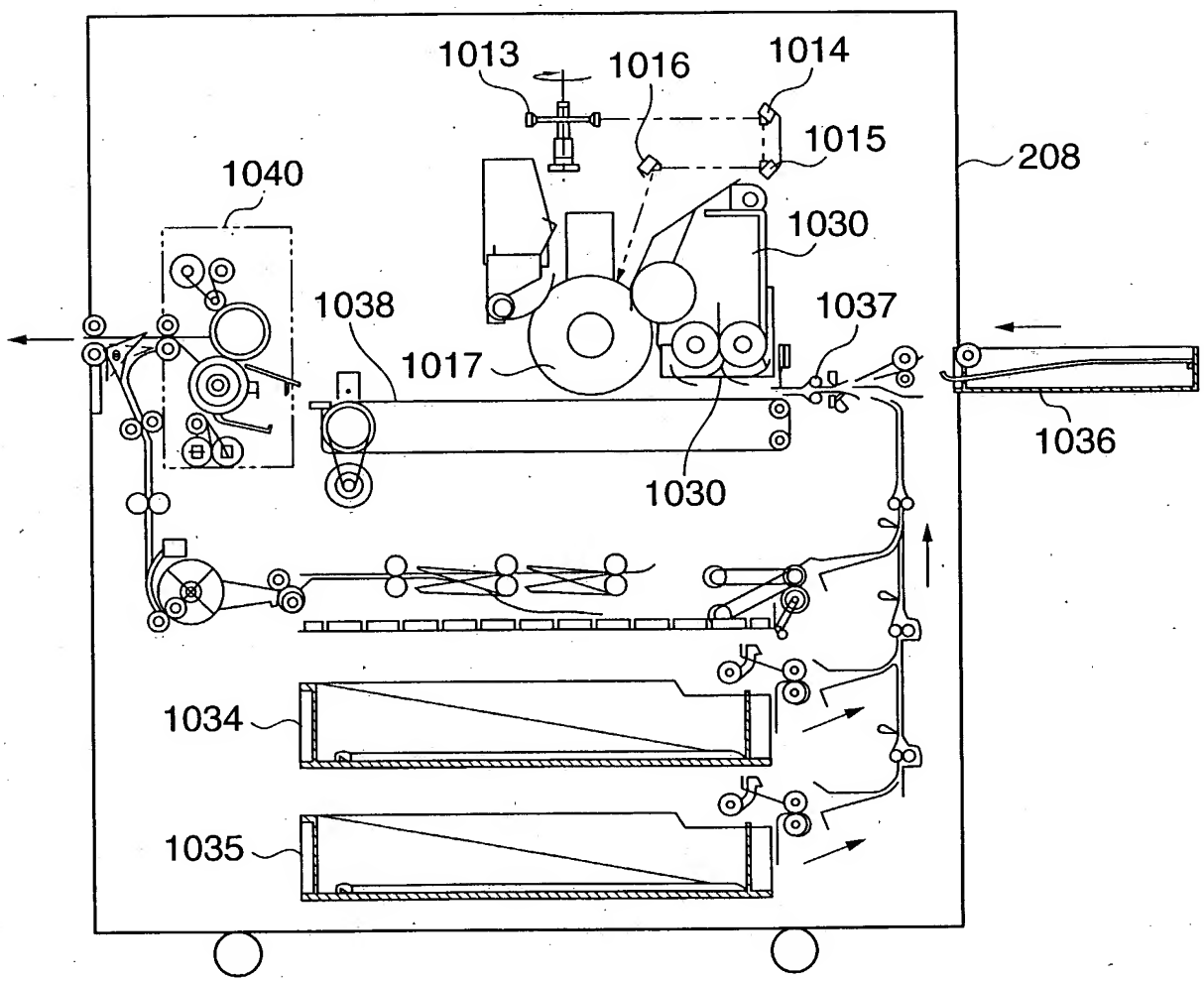

1013
1016
1014
1015
208
1040
1030
1038
1037
1017
1036
1030
1034
1035

FIG. 11

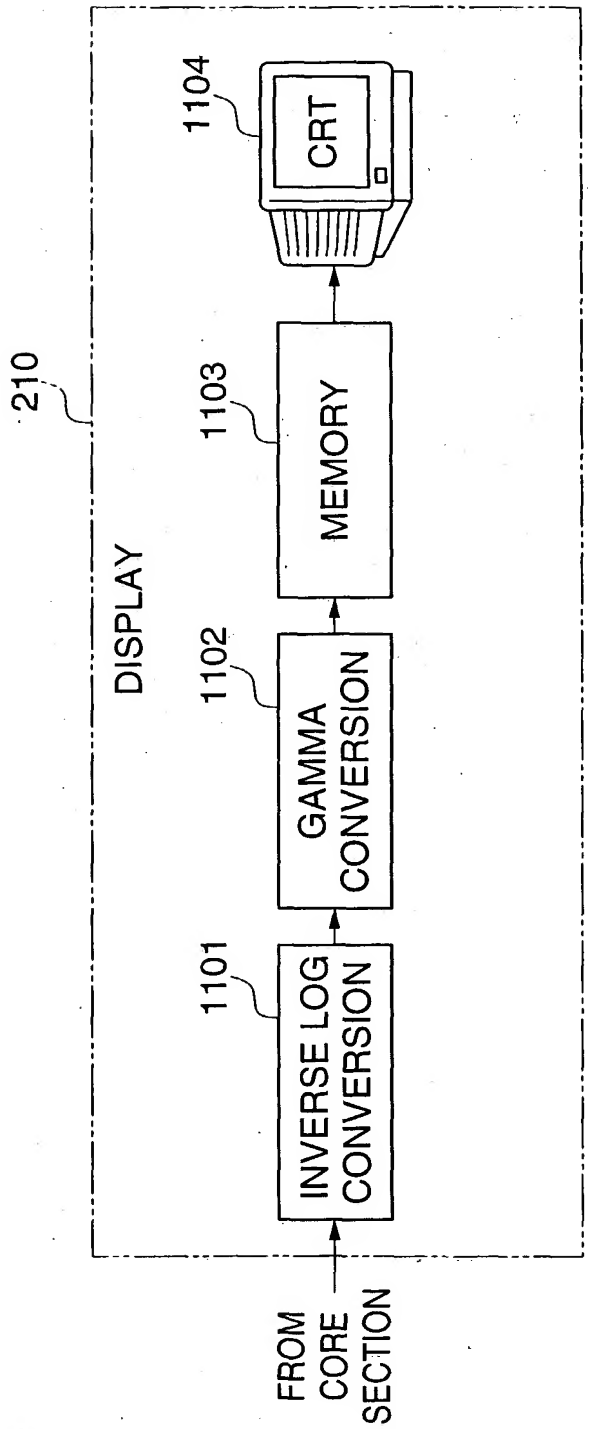

210
DISPLAY
1101
INVERSE LOG CONVERSION
1102
GAMMA CONVERSION
1103
MEMORY
1104
CRT
FROM CORE SECTION

FIG. 12

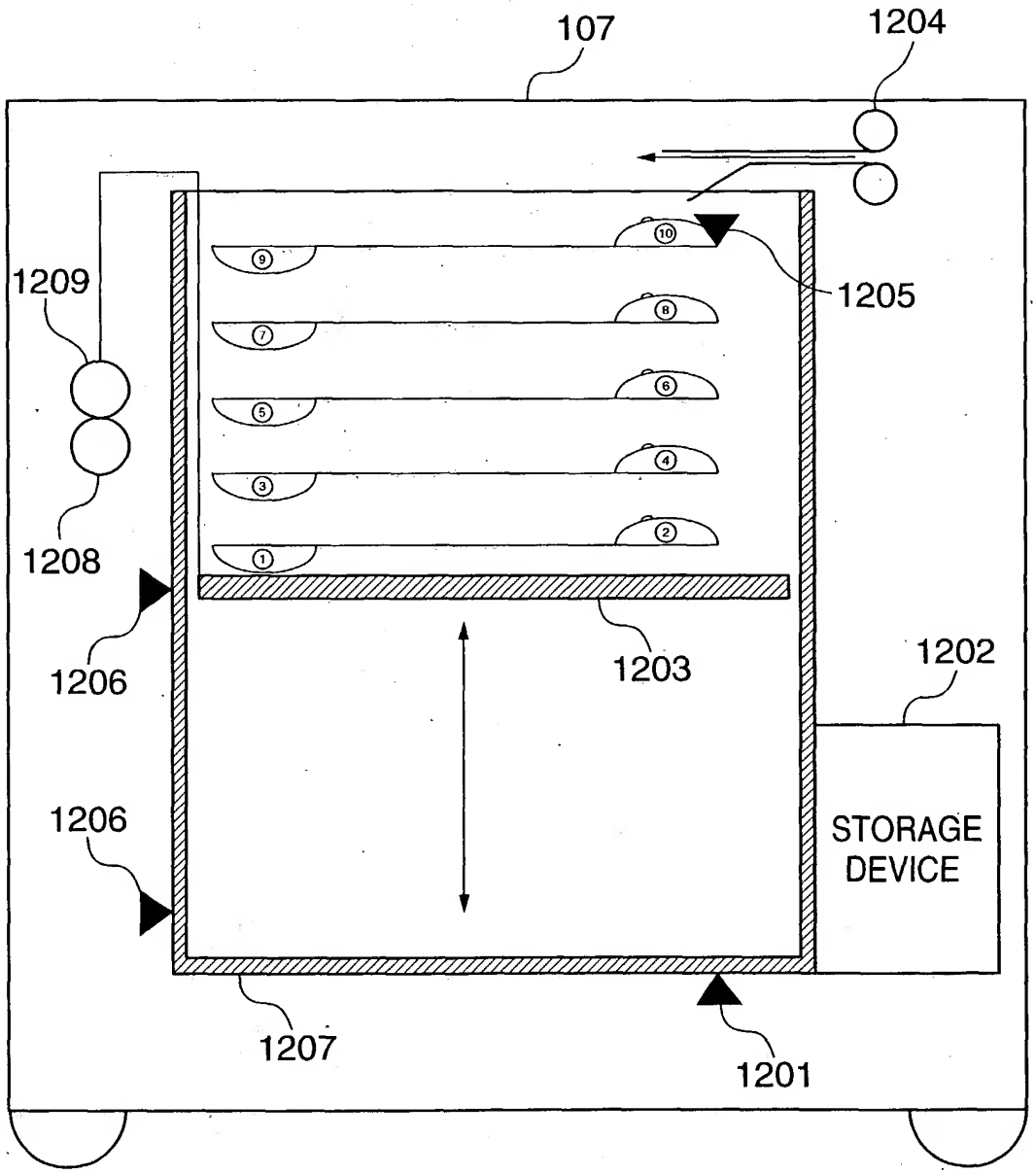

107
1204
1209
1205
1208
1206
1203
1202
STORAGE DEVICE
1206
1207
1201

FIG. 13

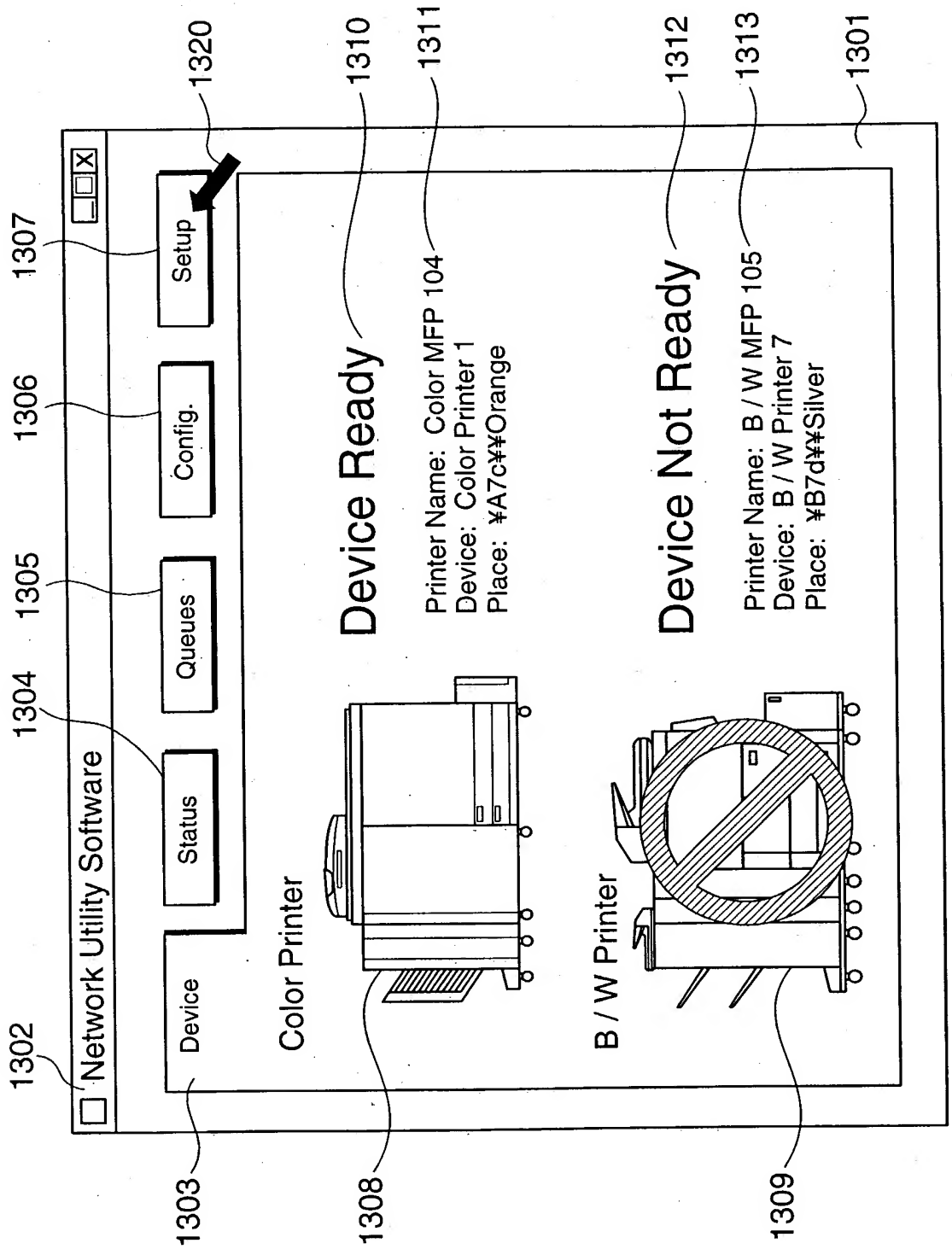

1302
Network Utility Software
1303
Device
1304
Status
1305
Queues
1306
Config.
1307
Setup
1308
Color Printer
1309
B / W Printer
1310
Device Ready
1311
Printer Name: Color MFP 104
Device: Color Printer 1
Place: ¥A7c¥¥Orange
1312
Device Not Ready
1313
Printer Name: B / W MFP 105
Device: B / W Printer 7
Place: ¥B7d¥¥Silver
1320
1301

FIG. 14

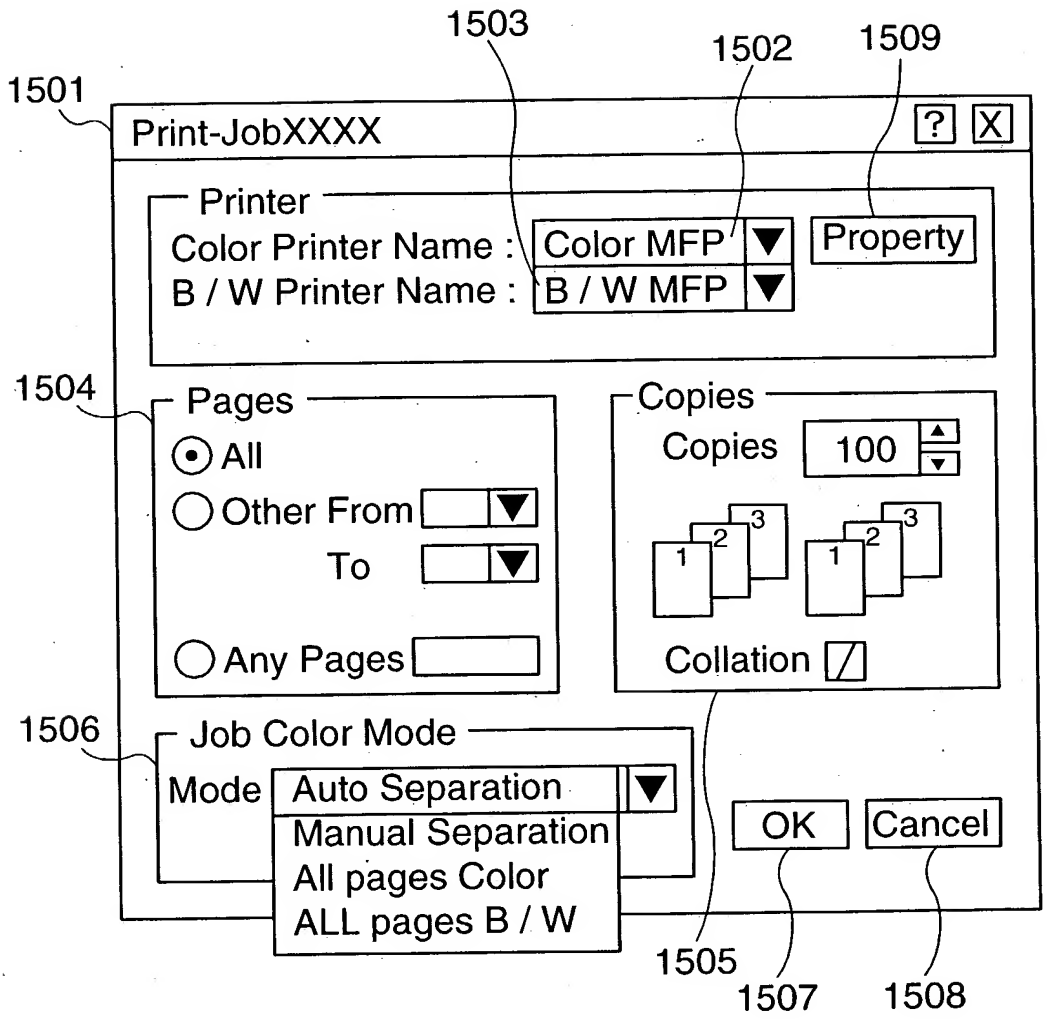

1501
1503
1502
1509
Print-JobXXXX
?
X
Printer
Color Printer Name :
Color MFP
Property
B / W Printer Name :
B / W MFP
1504
Pages
All
Other From
To
Any Pages
Copies
Copies
100
Collation
1506
Job Color Mode
Mode
Auto Separation
Manual Separation
All pages Color
ALL pages B / W
OK
Cancel
1505
1507
1508

FIG. 15

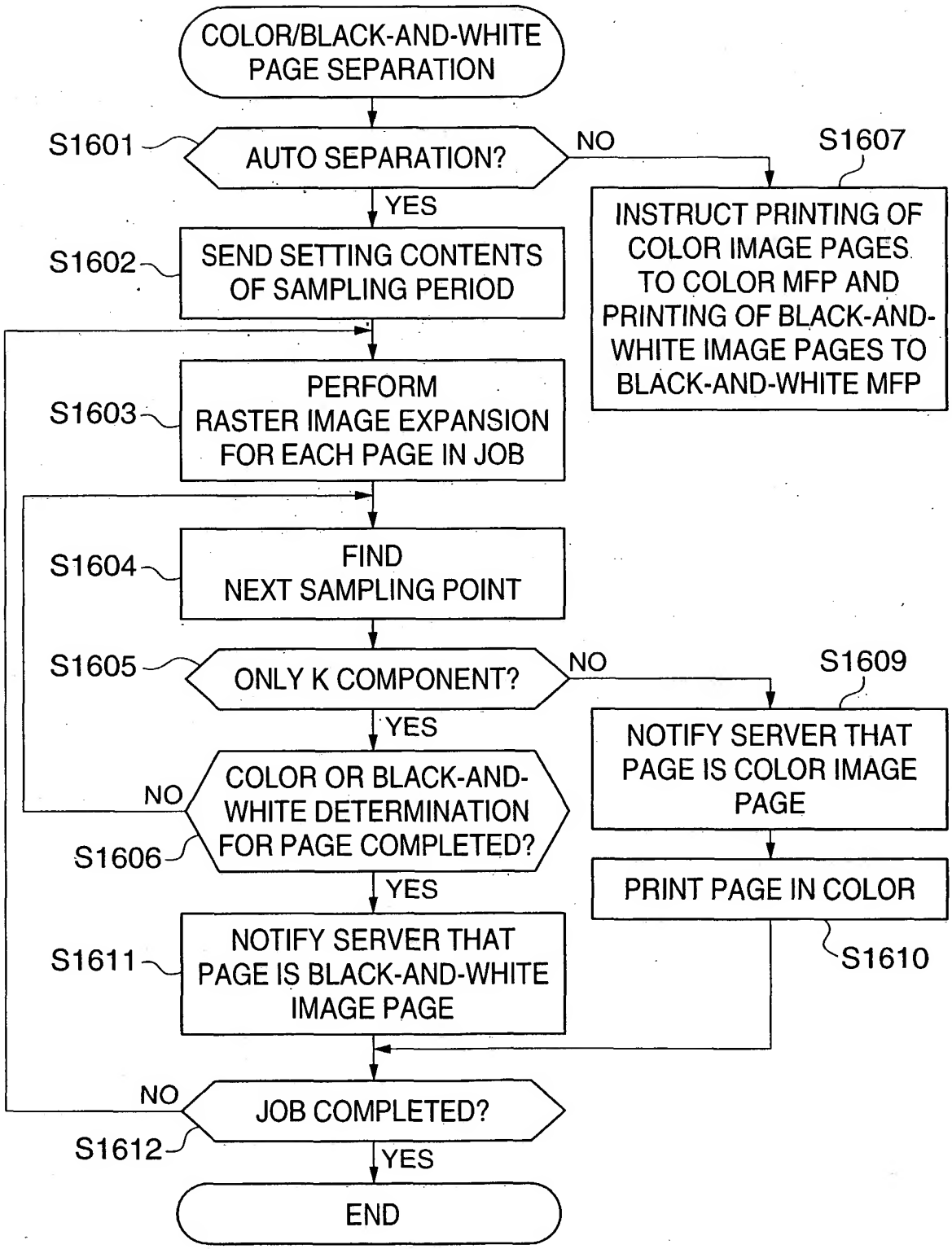

COLOR/BLACK-AND-WHITE PAGE SEPARATION
S1601
AUTO SEPARATION?
NO
S1607
INSTRUCT PRINTING OF COLOR IMAGE PAGES TO COLOR MFP AND PRINTING OF BLACK-AND-WHITE IMAGE PAGES TO BLACK-AND-WHITE MFP
YES
S1602
SEND SETTING CONTENTS OF SAMPLING PERIOD
S1603
PERFORM RASTER IMAGE EXPANSION FOR EACH PAGE IN JOB
S1604
FIND NEXT SAMPLING POINT
S1605
ONLY K COMPONENT?
NO
S1609
NOTIFY SERVER THAT PAGE IS COLOR IMAGE PAGE
YES
NO
COLOR OR BLACK-AND-WHITE DETERMINATION FOR PAGE COMPLETED?
S1606
PRINT PAGE IN COLOR
S1610
YES
S1611
NOTIFY SERVER THAT PAGE IS BLACK-AND-WHITE IMAGE PAGE
NO
JOB COMPLETED?
S1612
YES
END

FIG. 16

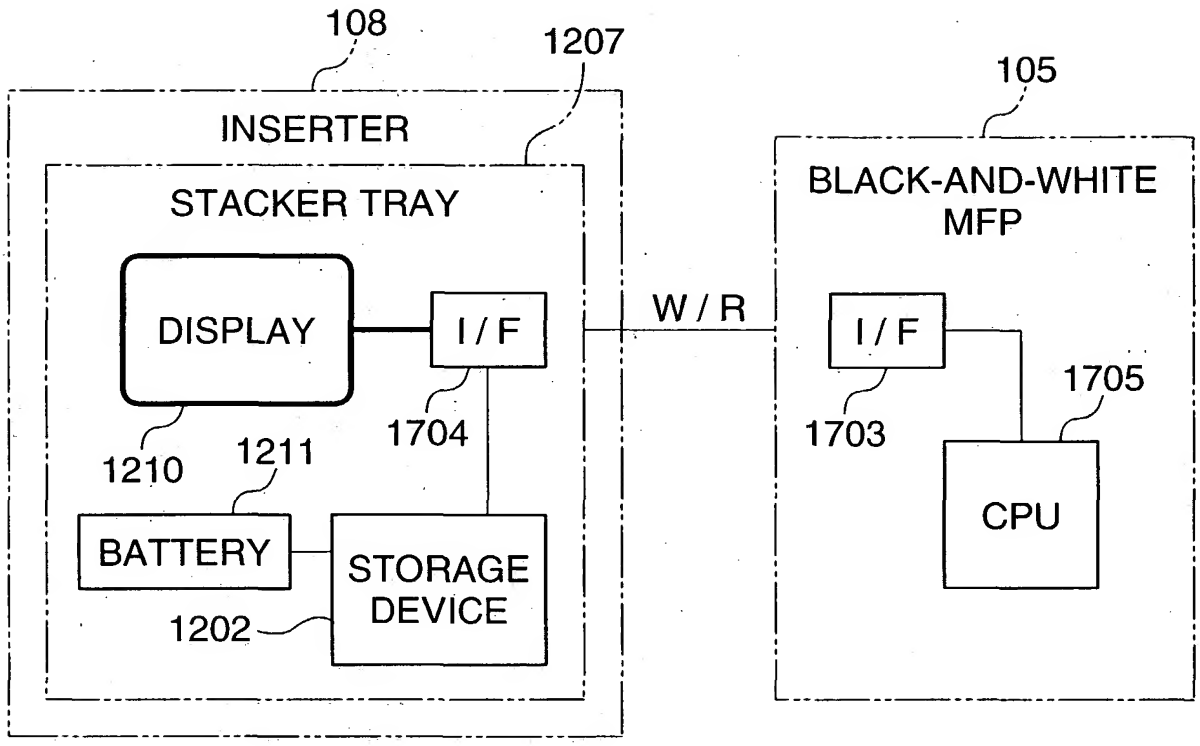

108
1207
105
INSERTER
STACKER TRAY
BLACK-AND-WHITE MFP
DISPLAY
I / F
W / R
I / F
1705
1704
1703
1210
1211
CPU
BATTERY
STORAGE DEVICE
1202

FIG. 17

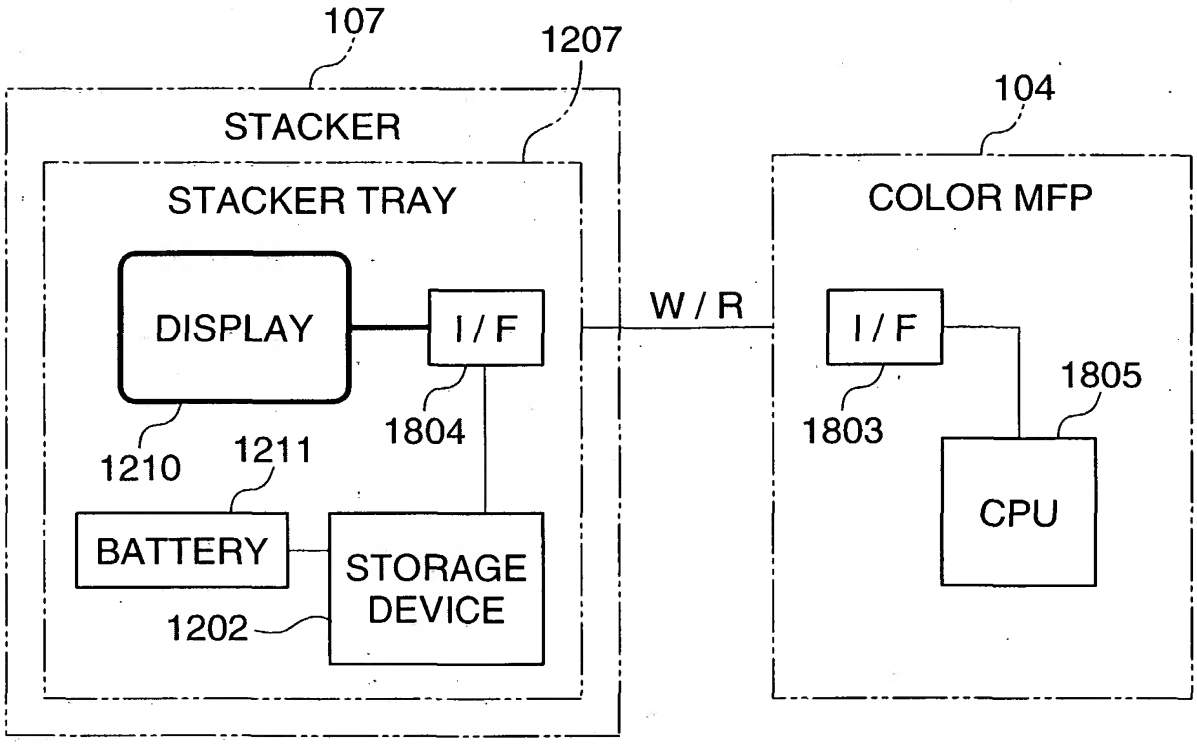

107
1207
104
STACKER
STACKER TRAY
COLOR MFP
DISPLAY
I / F
W / R
I / F
1805
1804
1803
1210
1211
CPU
BATTERY
STORAGE DEVICE
1202

FIG. 18

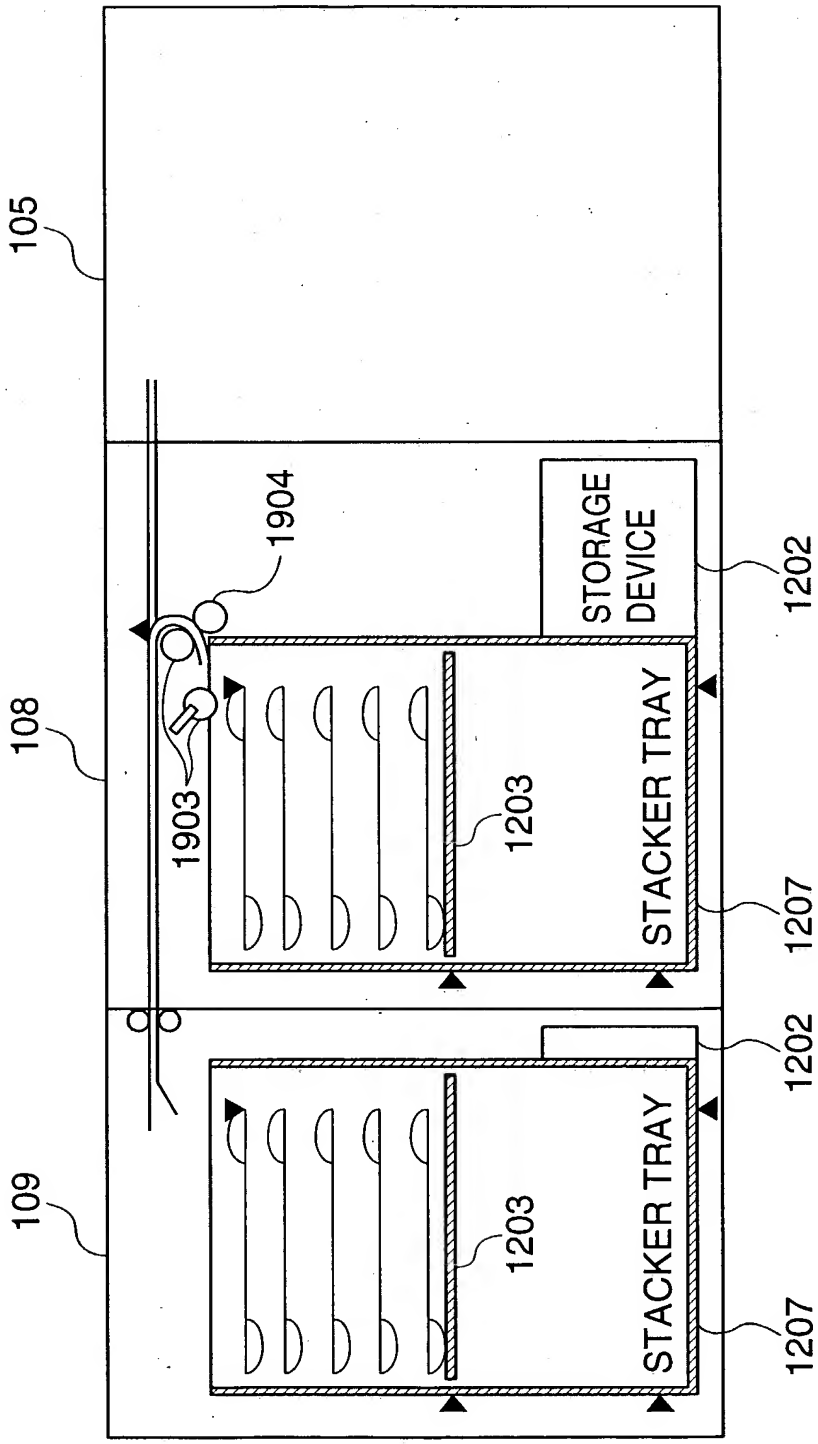
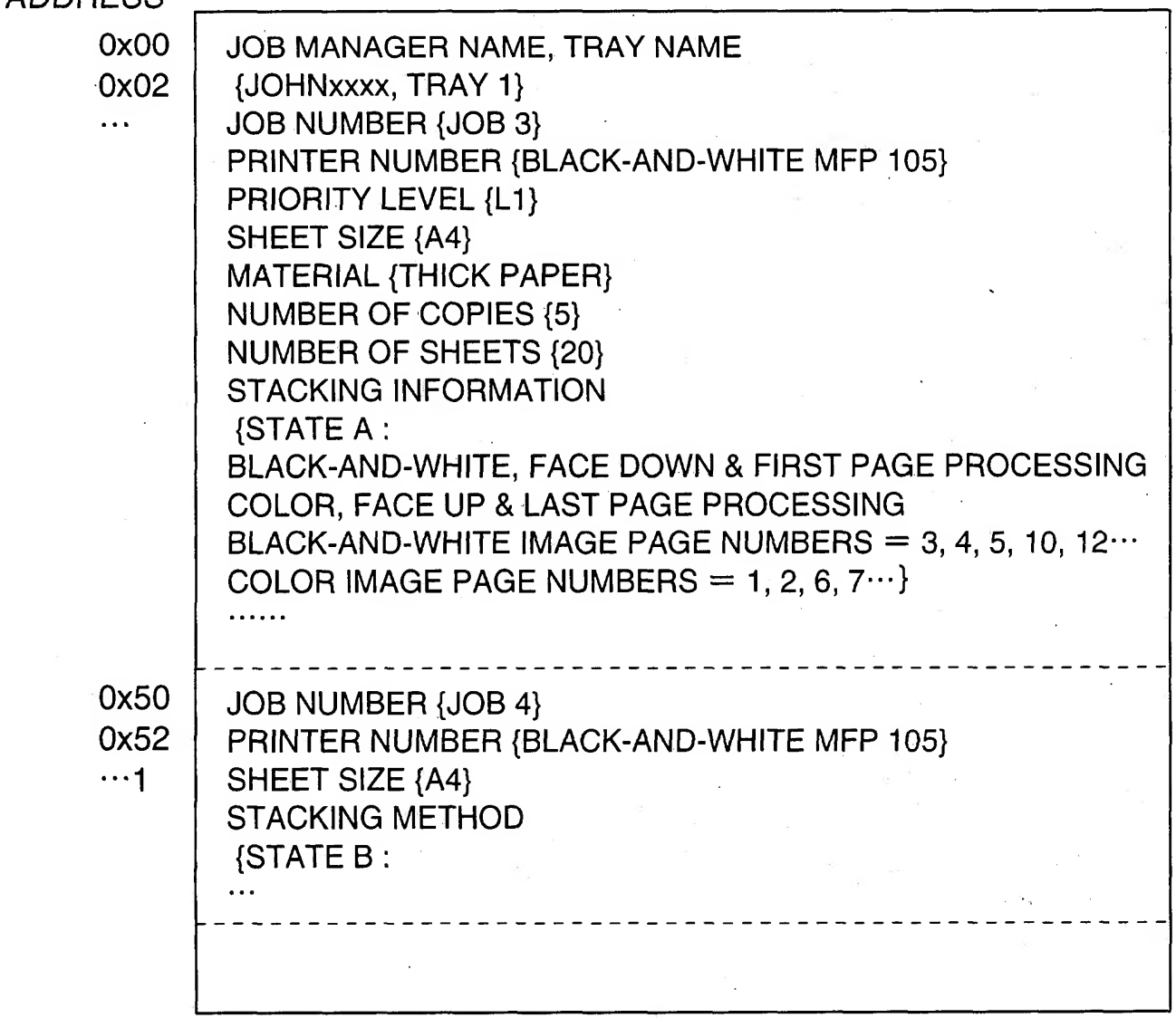

105
1904
STORAGE DEVICE
1202
108
1903
1203
STACKER TRAY
1207
1202
109
1203
STACKER TRAY
1207

FIG. 19



MEMORY MAP

FIG. 20

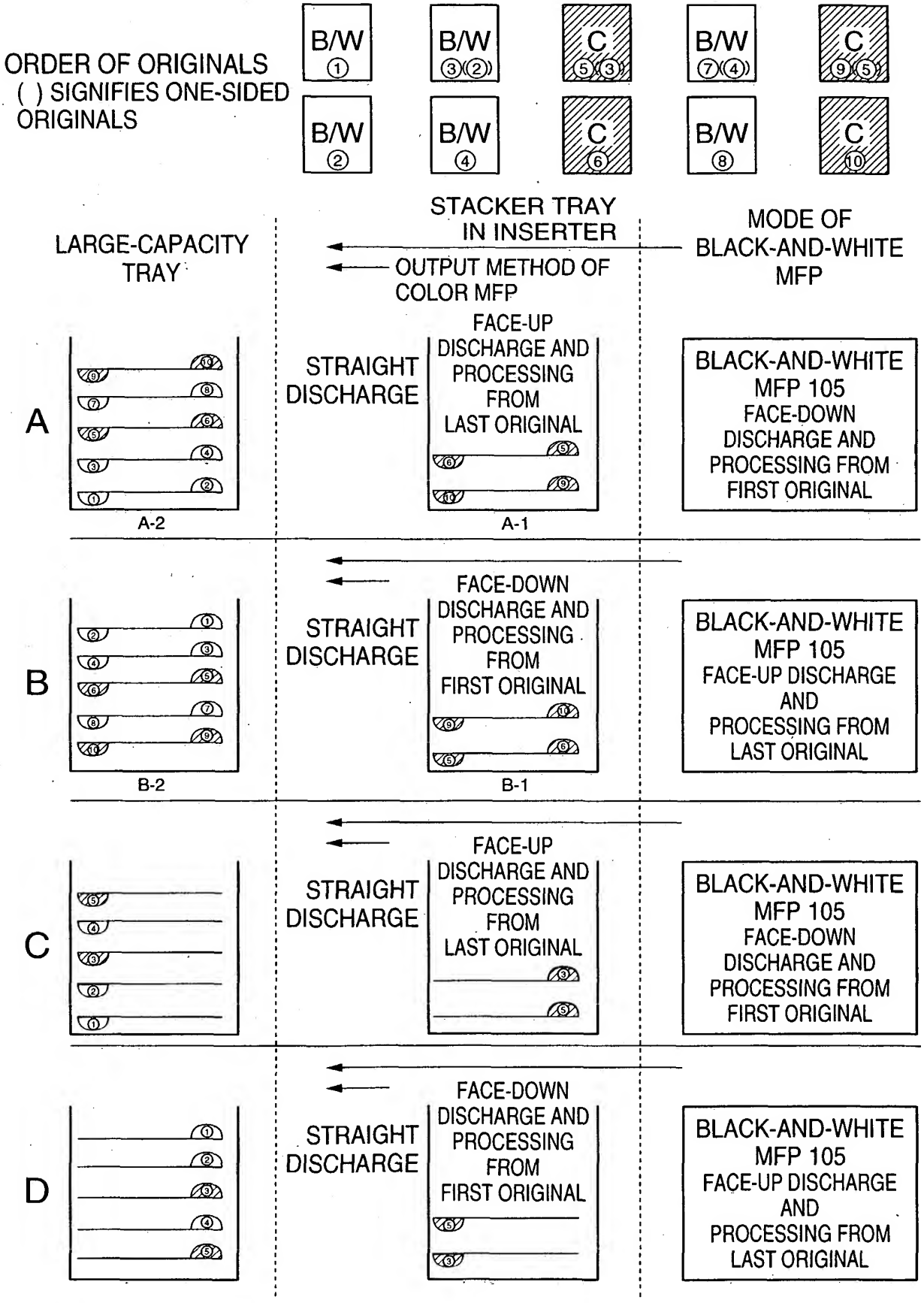

ORDER OF ORIGINALS
( ) SIGNIFIES ONE-SIDED ORIGINALS
B/W ① B/W ③② C ⑤③ B/W ⑦④ C ⑨⑤
B/W ② B/W ④ C ⑥ B/W ⑧ C ⑩
LARGE-CAPACITY TRAY
STACKER TRAY IN INSERTER
OUTPUT METHOD OF COLOR MFP
MODE OF BLACK-AND-WHITE MFP
A
STRAIGHT DISCHARGE
FACE-UP DISCHARGE AND PROCESSING FROM LAST ORIGINAL
BLACK-AND-WHITE MFP 105 FACE-DOWN DISCHARGE AND PROCESSING FROM FIRST ORIGINAL
A-2
A-1
B
STRAIGHT DISCHARGE
FACE-DOWN DISCHARGE AND PROCESSING FROM FIRST ORIGINAL
BLACK-AND-WHITE MFP 105 FACE-UP DISCHARGE AND PROCESSING FROM LAST ORIGINAL
B-2
B-1
C
STRAIGHT DISCHARGE
FACE-UP DISCHARGE AND PROCESSING FROM LAST ORIGINAL
BLACK-AND-WHITE MFP 105 FACE-DOWN DISCHARGE AND PROCESSING FROM FIRST ORIGINAL
D
STRAIGHT DISCHARGE
FACE-DOWN DISCHARGE AND PROCESSING FROM FIRST ORIGINAL
BLACK-AND-WHITE MFP 105 FACE-UP DISCHARGE AND PROCESSING FROM LAST ORIGINAL

FIG. 21

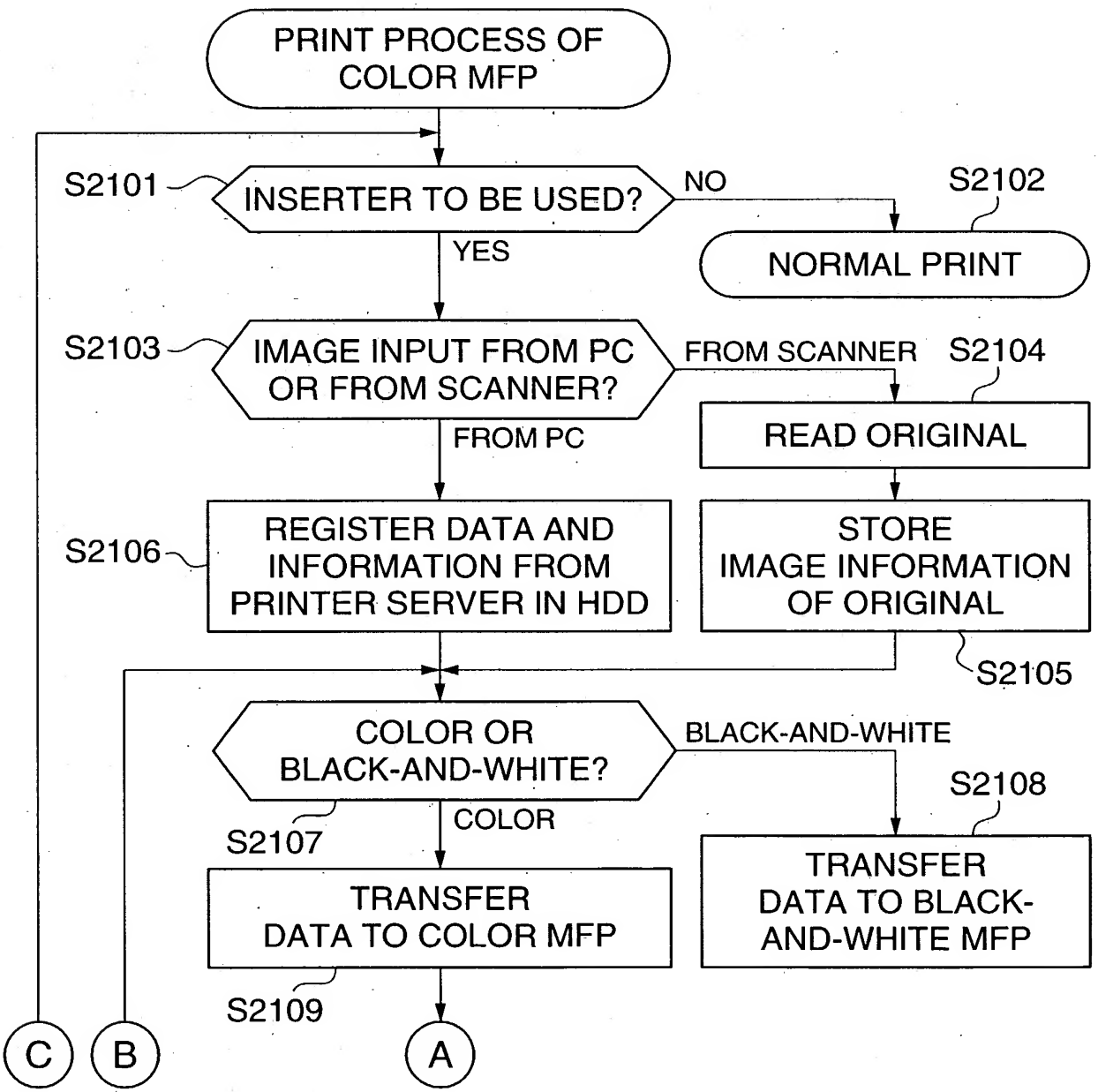

PRINT PROCESS OF COLOR MFP
S2101
INSERTER TO BE USED?
NO
S2102
NORMAL PRINT
YES
S2103
IMAGE INPUT FROM PC OR FROM SCANNER?
FROM SCANNER
S2104
READ ORIGINAL
FROM PC
S2106
REGISTER DATA AND INFORMATION FROM PRINTER SERVER IN HDD
STORE IMAGE INFORMATION OF ORIGINAL
S2105
COLOR OR BLACK-AND-WHITE?
BLACK-AND-WHITE
S2108
S2107
COLOR
TRANSFER DATA TO COLOR MFP
TRANSFER DATA TO BLACK-AND-WHITE MFP
S2109
C
B
A

FIG. 22

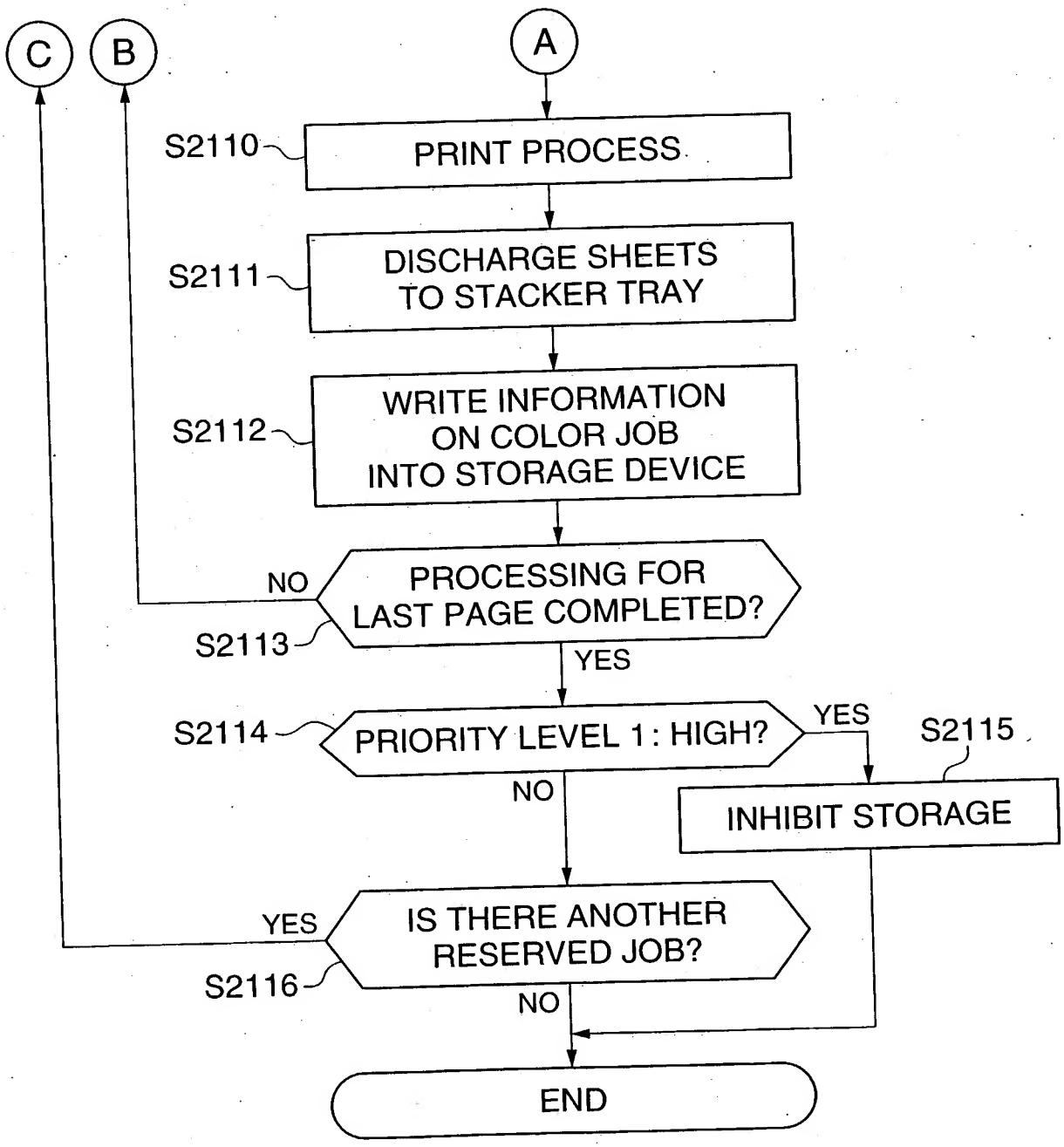

C
B
A
S2110
PRINT PROCESS
S2111
DISCHARGE SHEETS TO STACKER TRAY
S2112
WRITE INFORMATION ON COLOR JOB INTO STORAGE DEVICE
NO
PROCESSING FOR LAST PAGE COMPLETED?
S2113
YES
S2114
PRIORITY LEVEL 1 : HIGH?
YES
S2115
INHIBIT STORAGE
NO
YES
IS THERE ANOTHER RESERVED JOB?
S2116
NO
END

FIG. 23

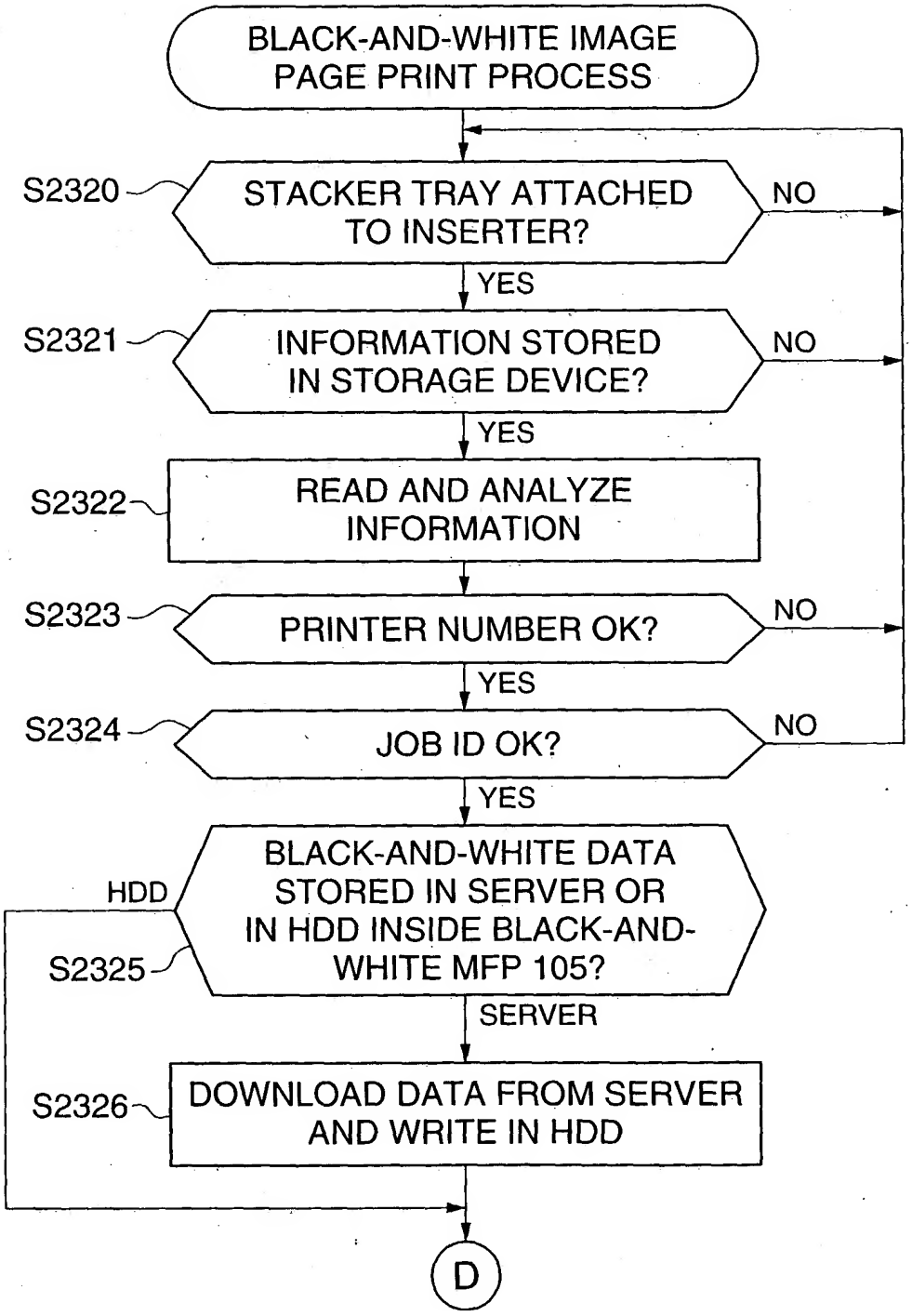

BLACK-AND-WHITE IMAGE PAGE PRINT PROCESS
S2320
STACKER TRAY ATTACHED TO INSERTER?
NO
YES
S2321
INFORMATION STORED IN STORAGE DEVICE?
NO
YES
S2322
READ AND ANALYZE INFORMATION
S2323
PRINTER NUMBER OK?
NO
YES
S2324
JOB ID OK?
NO
YES
HDD
S2325
BLACK-AND-WHITE DATA STORED IN SERVER OR IN HDD INSIDE BLACK-AND-WHITE MFP 105?
SERVER
S2326
DOWNLOAD DATA FROM SERVER AND WRITE IN HDD
D

FIG. 24

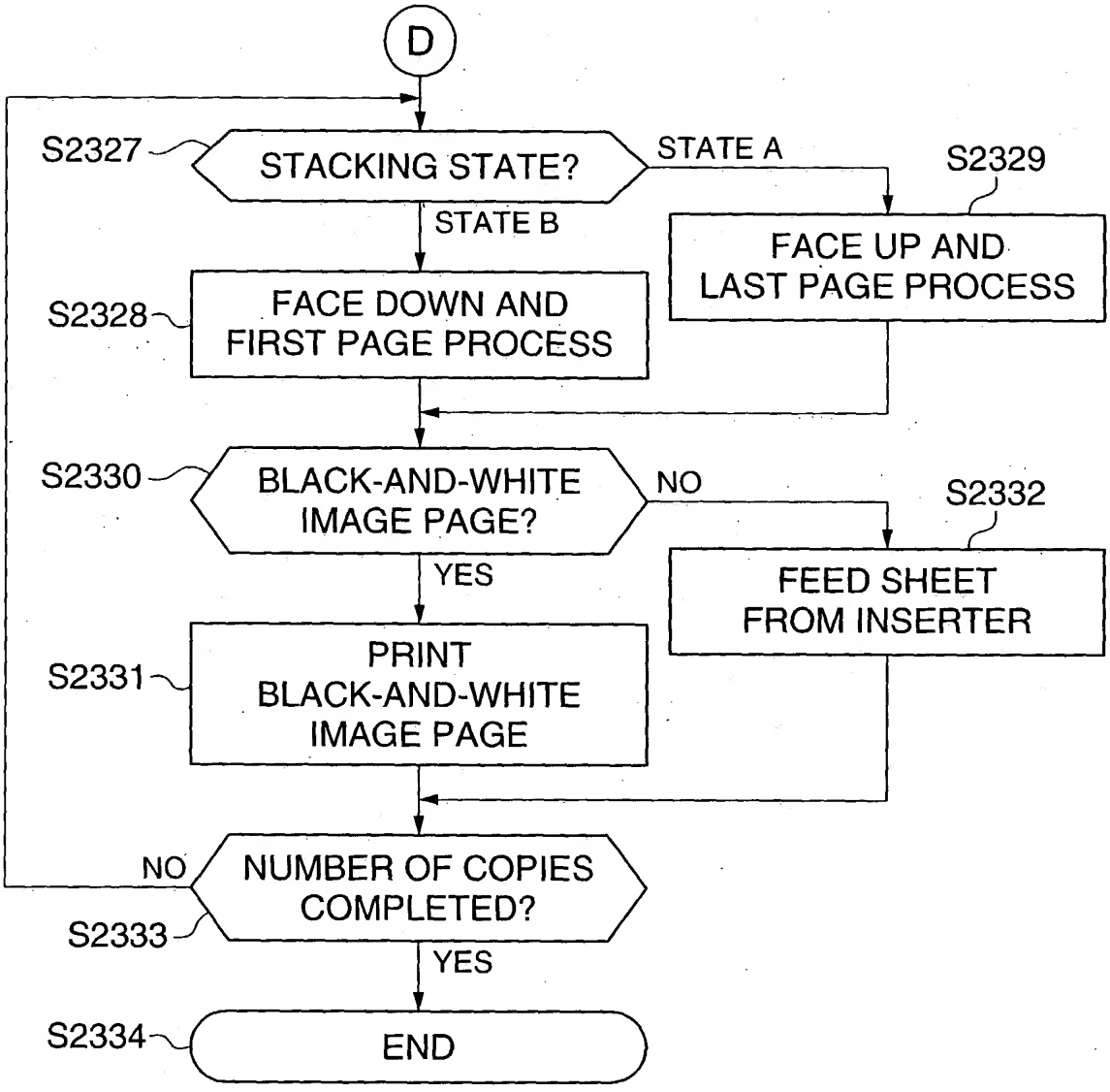

D
S2327
STACKING STATE?
STATE A
S2329
STATE B
FACE UP AND LAST PAGE PROCESS
S2328
FACE DOWN AND FIRST PAGE PROCESS
S2330
BLACK-AND-WHITE IMAGE PAGE?
NO
S2332
YES
FEED SHEET FROM INSERTER
S2331
PRINT BLACK-AND-WHITE IMAGE PAGE
NO
NUMBER OF COPIES COMPLETED?
S2333
YES
S2334
END

FIG. 25

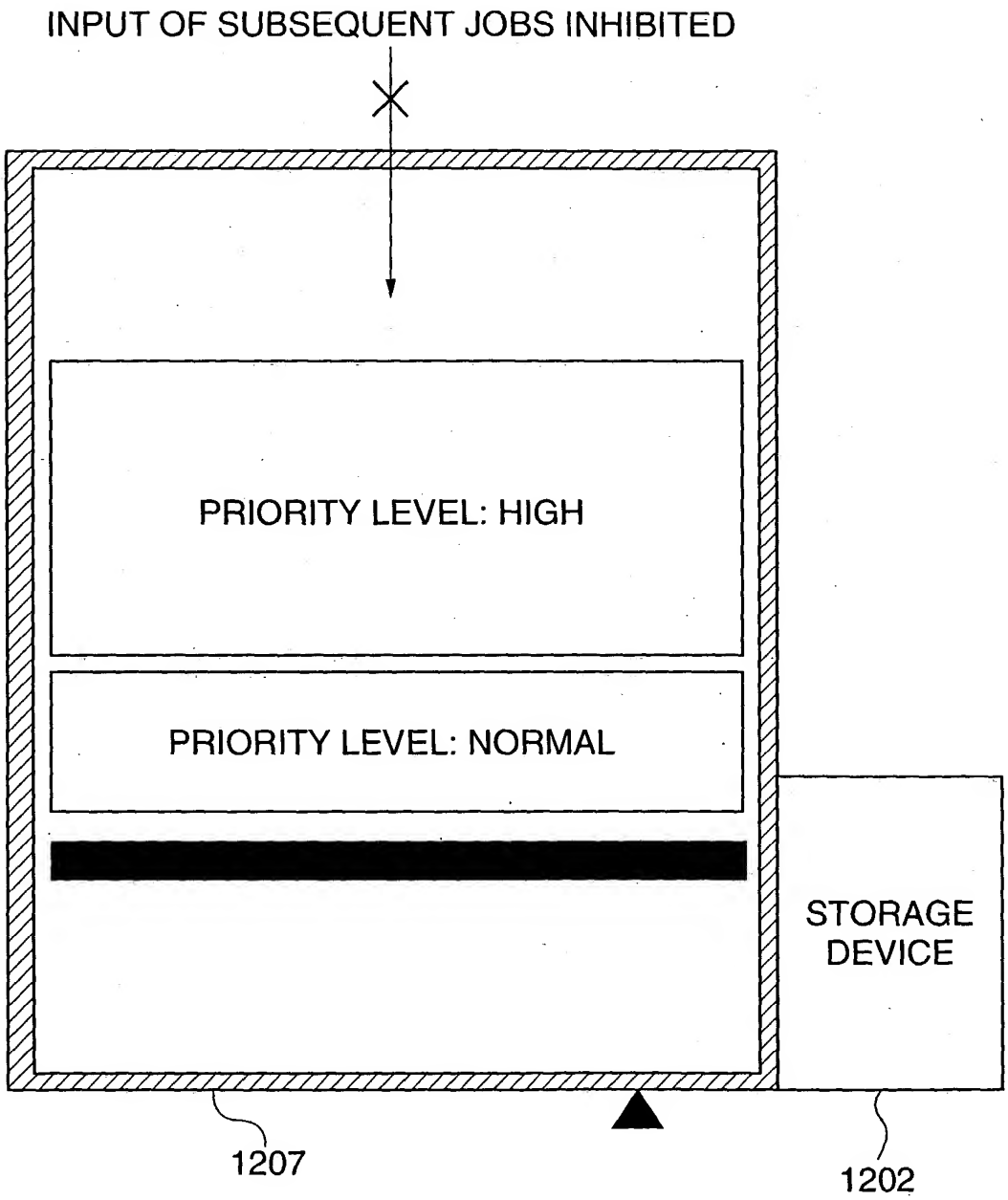

INPUT OF SUBSEQUENT JOBS INHIBITED
PRIORITY LEVEL: HIGH
PRIORITY LEVEL: NORMAL
STORAGE DEVICE
1207
1202

FIG. 26A

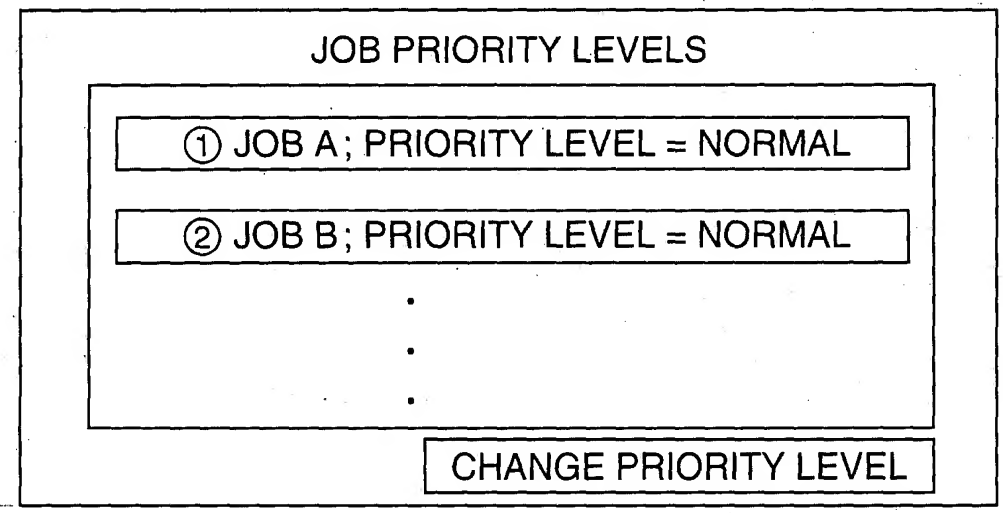


FIG. 26B

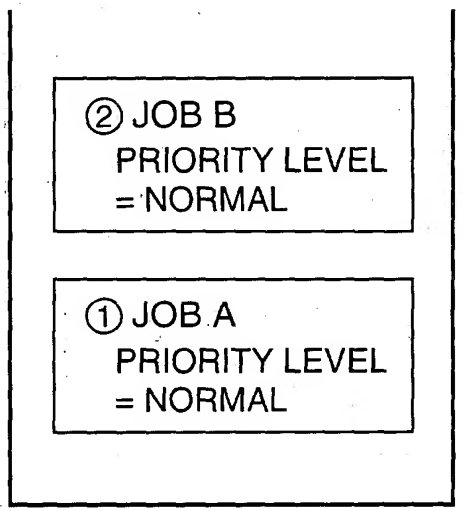


FIG. 26C

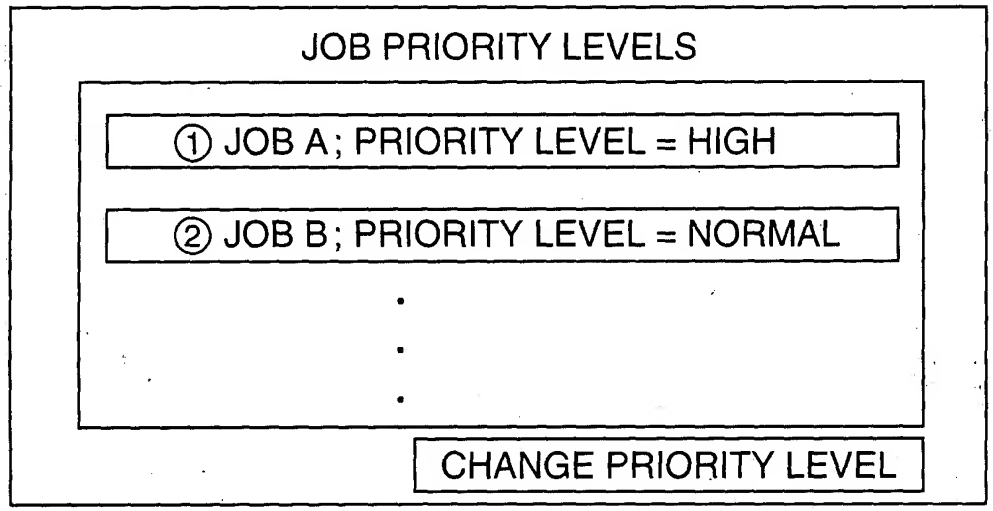


FIG. 26D

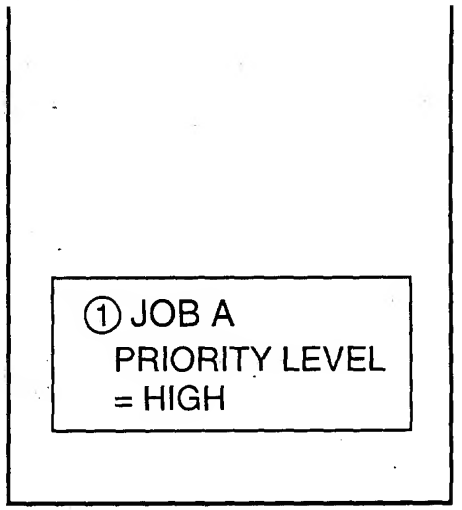
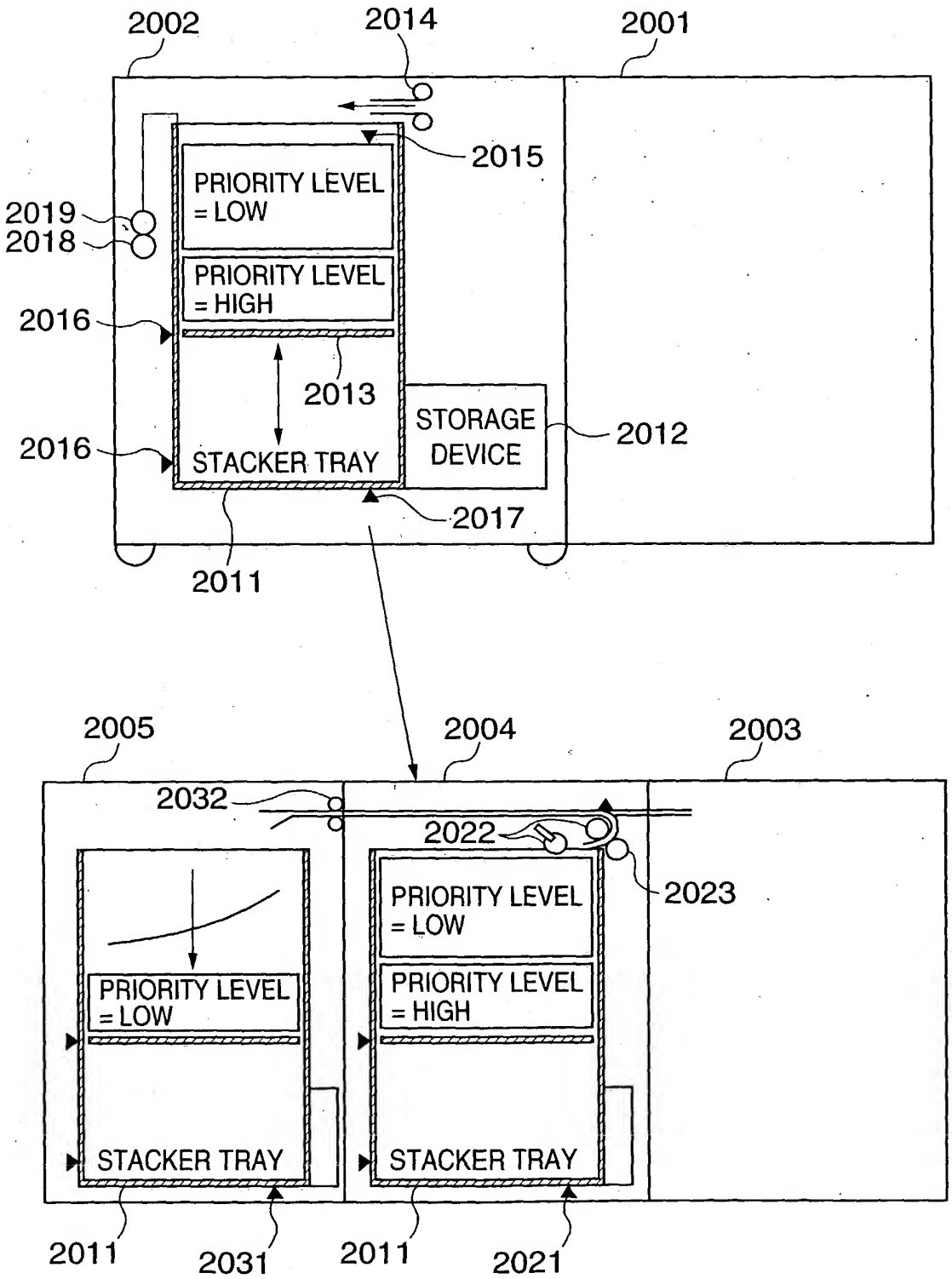


FIG. 27


2002
2014
2001
2015
PRIORITY LEVEL = LOW
2019
2018
PRIORITY LEVEL = HIGH
2016
2013
STORAGE DEVICE
2012
2016
STACKER TRAY
2017
2011
2005
2004
2003
2032
2022
2023
PRIORITY LEVEL = LOW
PRIORITY LEVEL = HIGH
PRIORITY LEVEL = LOW
STACKER TRAY
STACKER TRAY
2011
2031
2011
2021